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ABSTRACT

The report documents findings of a program for 13 severely emotionally disturbed adolescents in which student academic and behavioral intervention was stressed. Among findings were that the average annual cost per student was 37% of the cost of residential treatment; and that increases were shown in reading, spelling, and arithmetic as measured on the Wide Range Achievement Test and the Peabody Individual Achievement Test. Sections of the report are devoted to such topics as background and project objectives, external evaluation design, results of evaluation, areas to which services were directed, and evaluation recommendations. Nearly one half the document is composed of five appendixes, including descriptions of curriculum activities, analysis of attendance, and a summary of assessments for behavior change. (CL)

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PUBLIC SCHOOLS OF THE DISTRICT OF COLUMBIA



YOUTH IN PSYCHOEDUCATIONAL SERVICES PROGRAM

Final Report

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YOUTH IN PSYCHOEDUCATIONAL SERVICES

Marline Arline, Project Director

DIVISION OF RESEARCH AND EVALUATION

Mildred P. Cooper

Assistant Superintendent

June Bland

Assistant for Evaluation

TITLE IV-PART C EVALUATION UNIT

Lavolia Vails

Director

Marcia McBeath

Education Research Assistant

Mark Arenas

Research Assistant

Virginia Wise

Administrative Clerk

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SUMMARY

Title

Youth in Psychoeducational Services

Project Director

Marline Arline

Project Location

Bundy Elementary School

Target Population

Thirteen students, who have been diagnosed as severely emotionally disturbed.

Background

In response to Public Law 94-142 which mandates education for handicapped students in the least restrictive environment, and as a result of a needs assessment conducted by a Committee for Development of City-wide Services for Emotionally Disturbed Children and Youth, the YIPS program provides severely emotionally disturbed students with a cost-effective, psychoeducationally oriented treatment alternative to residential or institutional care.

Description of Project

With a staff of classroom teachers, aides, speech therapist, psychologist, and psychiatric social worker the YIPS program provides intensive academic and behavioral instruction/treatment to students with severe emotional problems. Through individualized educational plans, the program focuses on increasing achievement in the basic core academic areas of reading, spelling, and arithmetic. Parental input is invited and counseling services are made available for families. A favorable staff-to-student ratio facilitates the programs' goals of increasing the frequency of appropriate social and verbal interactions while decreasing inappropriate acting out or withdrawn behaviors.

Evaluation

The evaluation of YIPS will center on the extent to which the kind of program cited in the proposal has been established. Included in this analysis will be an examination of enrollment and attendance data; cost per pupil information; and academic and behavioral assessment data.

Findings

1. The YIPS program has served thirteen severely emotionally disturbed students, 9 female and 4 male, during the school year 1978-79.
2. Students in the YIPS program attend school more often than do comparable groups of students enrolled at Bundy School.
3. The average annual cost per-student in the YIPS program is 37% of the cost of residential treatment for that type of student.
4. Through extensive formal and informal assessments, appropriate behavioral, academic, and therapeutic programs have been developed for each student.
5. Students in the YIPS program are receiving five hours of "therapeutic community", three hours of group therapy and two hours of individual therapy per week.
6. Analysis of WRAT and PIAT pre - post scores shows significant increases made by 80% of the students in reading, spelling, and arithmetic.
7. On nine of the subtests of the Illinois Test of Psycholinguistic Ability the actual mean gain for YIPS students exceeded the expected gain.
8. A comparison of achievement during YIPS year with average of achievement during previous years showed a percentage increase over expected gain ranging from 277% in reading to 813% increased achievement in spelling.
9. Though gains were noted in the area of behavioral symptomology, improvement on only two of fifteen Devereaux factors were statistically significant.

Conclusions

1. The YIPS program is a cost effective alternative to institutional placement for severely emotionally disturbed students.
2. The YIPS approach is an intense psychoeducationally oriented program.
3. Students in the YIPS program have profited from this public school experience.
4. Changes in student behavioral symptomology though present were generally not statistically significant.

BACKGROUND AND PROJECT OBJECTIVES

Introduction

Purpose - The purpose of the YOUTH IN PSYCHOEDUCATIONAL SERVICES PROGRAM (YIPS) is to provide a specialized program for seriously emotionally disturbed children who might otherwise be institutionalized.

Need - Public Law 94-142 mandates that a free, appropriate public education be provided for all handicapped children. It also requires that the services be furnished in the least restrictive environment. Although there are classes for students with less intense emotional problems, the quality and availability of services to the seriously emotionally disturbed students is an area that has been consistently identified as a weakness in the District of Columbia Public Schools. The YIPS program is a public school alternative to hospital and private facility placement.

History - Since 1977, a Committee for Development of City-Wide Services for Emotionally Disturbed Children and Youth met regularly to assess needs and recommend services. In their study they found that the seriously disturbed were most in need of services. Representatives of the Division of Special Education of the District of Columbia Public Schools served on the committee. The Division of Special Education responded to the identified need by planning YIPS, a treatment program geared to such a population. The 1978-79 school year has been the first full year of implementation of the project.

Description of the Project

Target Population - A minimum of 28 students were identified as fitting the criteria of profoundly emotionally disturbed adolescents. These students have either (1) psychiatrically diagnosed psychotic, pre-psychotic, or borderline psychotic disorders, or (2) severe emotional disorders with behavioral deficits in thought processes, affect, and perception. From this population 12 students, age 13 or over have been selected to participate in the program. Placements are made by the Special Education committee based on the recommendations of the placement specialists from each region. The project is located in the Bundy School which also serves other emotionally disturbed children.

Staffing - The staff consists of three special education classroom teachers three educational aides, a special education speech therapist, a clinical psychologist, and a psychiatric social worker. Ancillary services are provided by an art therapist, an adaptive physical education teacher and an industrial arts teacher. The principal of the school serves as project director. Funding under this program pays only for one teacher, the psychiatric social worker, and two of the aides.

The Youth in Psychoeducational Services Approach:

Diagnoses - The identification and diagnostic processes include four main areas: (1) basic descriptive data, (2) educational, (3) socio-psychological,

psychiatric, and medical, and (4) input from parents. The descriptive area contains information such as age, sex, and socioeconomic data. The educational and socio-psychological diagnoses include standardized tests (See Appendix A) as well as sociometrics, anecdotal records, case studies, interviews and parental input. The psychiatric and medical diagnoses are used to obtain a more complete profile.

Classroom Operations - Based on the diagnostic information an appropriate behavioral, academic, speech and therapeutic program is developed for each student.

Behavioral - The classroom management process emphasizes teacher structuring of expected behaviors in both group and individual situations. Examples of the structuring are: assigning clearly defined tasks; rechanneling energies into acceptable activities; limiting space and tools to reduce stimulation; and using physical control such as restraining and comforting.

Academic - The academic process is characterized by individual and small group instruction using a multisensory approach. Teachers try to assure success experienced through the use of immediate reinforcement and motivating materials. Special training designed to decrease perceptual deficits is incorporated into the classroom program. Therapists in speech, art, industrial arts and adaptive physical education also contribute to the academic core.

Therapeutic - The therapeutic component is considered an integral part of the psychoeducational program. Students are involved in at least 10 therapy hours per week including two hours in individual therapy and five hours in a therapeutic community. During the therapeutic community sessions, students discuss positive and negative aspects of the program.

On a continuous basis, staff members seek to create a climate of emotional understanding and support through the use of interpersonal and group relationship building processes. Home visits are made prior to program entrance in order to start the relationship building process early. Emotional support from adults include program adjustments such as providing tasks that allow for low frustration, high reward, and easy success; and through personal actions such as a reassuring touch, or recognition and verbalization of pupils' feelings. A variety of strategies are used based on the individual needs of students or the situational needs of a group. One of the diagnostic treatment strategies used to help staff plan more effectively and efficiently for student goals is called SOAP (Stated/Subjective, Observed/Objective, Assessment Plan.)

In the event of a crisis in the life of the student or the student's family 24 hour emergency care is provided.

Staff Development - All staff members have previous experience and training in working with disturbed youngsters. Problems and possible solutions are discussed at bi-weekly staffings attended by all Y.I.P.S. faculty members.

Parental Involvement - Parents are involved in the diagnostic and placement procedures and are offered the opportunity to receive counseling on a regularly scheduled basis or as an emergency arises. They are invited to attend therapeutic team meetings and receive written summaries of such major changes in a student's program or placement as contemplated. In accordance with P.L. 94-142 all parents were involved in the development of their Children's Individualized Education Program (I.E.P.).

Stated Objectives

- A. By September, 1978 the Division of Special Education will establish a year round, psychoeducationally oriented day program for twelve (12) adolescent age profoundly emotionally disturbed students who are presently unserved, inadequately served, or in residential programs as a result of non-availability of local day services.
- B. Based on the observable pathology of this population, the following objectives will specify the most relevant areas of behavior to which services will be directed:
 1. Self care
 2. Cognitive (mastery behavior)
 3. Social interaction
 4. Verbal interaction
 5. Behavioral symptomology

Each objective will apply from the period of time that the program is initiated (September 1978) to the period of time in which post-test measures will be taken (May 1979).

1. Self care

To increase the frequency of self-care behaviors to the extent that all of the students will move closer to independent accomplishment of toileting, eating, bathing, grooming and care of belongings as measured by a structured record of behavioral observations.

2. Cognitive/Mastery behavior

To improve the cognitive functioning and drive for mastery of eighty percent (80%) of the enrolled students as measured by a statistically significant increase of post-test over pre-test scores on selected instruments determined to be relevant on an individual basis.

3. Social interaction (interpersonal relations)

Eighty percent (80%) of the enrolled students will show increased frequency of appropriate social interactions with peers and adults as measured by the Devereaux Adolescent Behavior Rating Scale.

4. Verbal interaction

Eighty percent (80%) of the population will show reduced frequency of inappropriate verbal interactions (e.g., delusional speech, discrepant verbalizations, echolalia, disinclination to use sounds and words) as measured by the Devereaux Adolescent Behavior Rating Scale.

5. Behavioral symptomatology

Eighty percent (80%) of the population will show reduced frequency of inappropriate acting out or withdrawn behaviors (e.g., bizarre actions, compulsive or stereotyped behaviors, poor emotional control, defiant-resistive behaviors) as measured by the Devereaux Adolescent Behavior Rating Scale.

EXTERNAL EVALUATION DESIGN

The external evaluation is designed to measure the objectives to determine the degree to which they were met, to determine the success/effectiveness of the project, and to examine certain aspects pertaining to exportability. The following evaluation activities were carried out:

Objective A - Establishment of a Program

1. A review of enrollment data to determine the number of students in the program and to verify that they are considered severely emotionally disturbed
2. An examination of records of activities to show evidence of a psychoeducationally oriented program
3. A review of curriculum activities to determine if the psychoeducationally oriented program includes the curriculum skills designated in the project proposal
4. An analysis of attendance records of YIPS students as compared to two other groups of emotionally disturbed special education students to determine the statistical difference between the groups - the tests to be performed are the Mann-Whitney U test; mean differences without statistical tests; and average percent of attendance, with differences on the U test accepted as being significant if they reached the .05 level
5. A comparison of cost data for residential treatment programs for students with comparable disorders to determine the cost effectiveness of the YIPS program

Objective B - Areas to which Services were Directed

1. A comparison of pre- and post- scores in Reading, Spelling, and Arithmetic to determine the percentage of students showing gains, with 80% acceptable as fulfilling the objective
2. An analysis of Reading, Spelling, and Arithmetic scores to determine the significance of the difference between pre- and post-testing - Wilcoxon's T statistic for the Matched-Pairs Signed-Rank's Test was to be performed and T would be considered significant if it reached the .05 level
3. An examination of pre- and post- scores on Reading, Spelling, and Arithmetic, controlling for years in school, to determine percent of increase of observed gain over expected gain
4. A comparison between predicted mean gain and actual mean gain on the Illinois Test of psycholinguistic abilities to determine the number of subtests on which real gains are made
5. A review of a statistical analysis of the factors on the Devereaux Adolescent Behavior Rating Scale to determine behavior change in the areas of social Interaction, Verbal Interaction, and Behavioral Symptomatology - the analysis is to include means and standard deviations, with comparison to normal groups; and Wilcoxon Test analysis for pre-post change.

Exportability - Items discussed are those of particular relevance to this project: Target population; nature of institutional variables; community and home variables; and personnel

RESULTS AND DISCUSSION

Establishment of a Program - Objective A

Student Population - The program was established with 13 students, 9 female and 4 male, ranging in age from 13 to 17. Two of the male students withdrew during the year, one to enter a Job Corp program and the other to be placed in a residential setting. These students were replaced by two others, a male student who entered the program in the middle of the year, and a female who entered during the last month of the program. All of the students have been diagnosed as having severe emotional problems.

Program Activities - The following psychoeducationally oriented activities have been accomplished:

1. Informal and/or formal assessments have been completed on each student in the cognitive and affective areas.
2. Pre- and post-tests in the affective areas have been completed.
3. An appropriate behavioral, academic, speech and therapeutic program have been developed for each student.
4. Students are involved in a daily "therapeutic community" at which time appropriate social and verbal interaction skills are managed and developed.
5. Students are involved in therapy ten (10) hours per week. Therapy includes: five (5) hours in "therapeutic community", three(3) hours in group therapy, and two (2) hours in individual therapy.
6. Students have been involved in six (6) weeks of Therapeutic Horseback Riding.
7. Field trips have included: two (2) weeks of recreational swimming, shopping trip to a neighborhood grocery store, Gino's and MacDonalds for lunch, Waltha Daniel Neighborhood Library, Dunbar High School tour of Career Resource Center, trip to the Air and Space Museum, African Art Museum, and Museum of Natural History.
8. Y.I.P.S. students were included in Bundy School Sports Day; a parent, staff, student picnic; and an Awards Day.

Curriculum Activities - Students have been exposed to a variety of activities including those to develop perception, reading, math, science and survival skills (See Appendix B).

Attendance - A statistical analysis of attendance records of YIPS students as compared to two other groups of emotionally disturbed special education students randomly drawn from another population was done by Ronald Williams, psychologist at Bundy School (See Appendix C.) His analysis was summarized as follows:

The students in the Y.I.P.S. Program attended school on the average of 145.18 days during the past academic year (1978 to 1979). This average rate of attendance was significantly larger (Editor's Note - significance was at the .05 level) than that observed in two comparison groups that were randomly drawn from the Bundy School Program. The superiority in rate of attendance was consistent and stable across the three evaluative techniques employed in this analysis (i.e., Mann-Whitney U Test, mean differences--without statistical tests, and average percent of attendance).

In summary, this analysis demonstrates that the students (11) who are active participants in the Youth in Psychoeducational Services Program attended school more often than those students enrolled in the Bundy School Program.

Cost - Since this program has been designed as an alternative to institutional or private facility placement, a per-pupil cost comparison was made. Cost data came from several sources which will be indicated. There are large differences between the lowest and highest costs due to variations such as level of services, degree of supervision, geographic location, and age of recipient (Piasecki et al, 1978)*

An example of a full service program in the District of Columbia is the Psychiatric Institute which charged \$4,750.00 per month for residential treatment of severely emotionally disturbed children in 1976.**

*Piasecki, Joseph; Pittinger, Jane; Rutman, Irvin, Determining the Costs of Community Residential Services for the Psychosocially Disabled, National Institute of Mental Health (DHEW), Rockville, Md., Division of Biometry and Epidemiology, Report No. DHEW - ADM 77-504, 1978.

**1977 Directory, U.S. Facilities and Programs for Children with Severe Mental Illness, U.S. Department of Health, Education and Welfare, Public Health Service; Alcohol, Drug abuse, and Mental Health Administration, National Institute of Mental Health, Rockville, Maryland, 1977.

When cost data come from published reports, amounts are usually two or three years old. According to Piasecki the "Rate of inflation for residential services has matched or exceeded the general inflation rate."*

For example, the average cost in the United States for an individual in a Halfway House for mentally ill juveniles was reported in Piasecki's report as \$17.89 per diem in 1973 and \$27.76 per diem in 1976. Residential Treatment Centers for Emotionally Disturbed Children under 18 reported the cost per day as \$38.00 in 1973 and \$47.00 in 1975.**

Using these two data and the consumer price index,*** it was possible to use a forecasting method (See Appendix D) to predict the cost in June of 1979 and June of 1980 (See Table I.)

TABLE I

Predicted Average Cost Per Diem for Two Types of Programs for Emotionally Disturbed Youth

	<u>Halfway House</u>	<u>Residential Treatment Centers</u>
June, 1979	\$38.55	\$72.81
June, 1980	\$43.00	\$81.23

Since students in the YIPS program are too disturbed to be accepted into a Halfway House program, the Residential Treatment Centers would be a more realistic cost for comparison. Changing per diem to annual cost, the figure for 1979 becomes \$26,575.65.

*ibid, p. 50.

**Witken, Michael, "Residential Treatment Centers for Emotionally Disturbed Children, 1975-76:" Mental Health Statistical Note No. 135, U.S. Department of Health Education and Welfare, Public Health Service, Alcohol, Drug Abuse and Mental Health Administration, National Institute of Mental Health Division of Biometry and Epidemiology Survey and Reports Branch, Rockville, Maryland, July 1977, Reprinted 1978.

***by telephone September 13, 1979, from U.S. Bureau of Labor Statistics, Department of Labor, Washington, D.C.

The District of Columbia Public Schools, Under P.L. 94-142 does pay for students in residential treatment. The present annual cost is approximately \$23,000.* This amount is similar to the national average reported above.

The total funding budgeted for the YIPS program in 1979 was \$103,464. Dividing that amount by the 12 students in the program, the average annual cost per student is \$8,622, an amount which is 37% of the cost of residential treatment for a similar District of Columbia Public School student. (See Table II for cost comparison)

TABLE II

Cost Comparison for Programs for Seriously Emotionally Disturbed Students for 1978-79

<u>National Average Cost Per Pupil for Residential Treatment</u>	<u>District Cost Per Pupil for Residential Treatment</u>	<u>YIPS Project Average Cost Cost per Pupil</u>
\$26,575	\$ 23,000	\$8,622

Note: See preceding paragraphs for derivation of data

The cost data show that the YIPS program is a cost effective alternative to institutional or private facility placement.

Objective A states that a year round, psychoeducationally oriented day program will be established for 12 adolescent age profoundly emotionally disturbed students. The results of this evaluation show that the objective has been met.

*D.C. Public Schools cost data from Mr. Sewell Horad, Division of Special Education.

Areas of Behavior to Which Services Were Directed - Objective B

Self Care - The self care area was not measured since none of the students was found to be grossly deficient in such behaviors when the project began.

Cognitive/Mastery Behavior - Pre- and post-testing was administered to the 11 students who were in the project the full year. Areas measured were: Reading, Spelling, Mathematics, and various specific aspects of cognitive functioning. The academic subjects were measured by the Wide Range Achievement Test, Revised Edition (WRAT) or the Peabody Individual Achievement Test (PIAT). The cognitive functioning areas were measured by the Illinois Test of Psycholinguistic Abilities (ITPA)

The WRAT, written by J.F. Jastak, S.R. Jastak, and S.W. Bijou, was revised to its present form in 1965 with new norms published in 1976. It is a standardized, individually administered instrument designed for a quick measurement of reading recognition, spelling, and arithmetic. According to the test manual, it has good predictive reliability, an important factor in this pre - post design. Reviews in Buros Mental Health Measurement Yearbooks generally are not positive. In referring to a factor analysis described in the manual, one reviewer said, "The exact nature of the procedure is apparently known only to the authors and God, and He may have some uncertainty." * Nevertheless the test is a very popular instrument with clinical and school psychologists, especially with difficult-to-test students because: (1) it is quick and easy to administer; and (2) it seems to differentiate between students who have achieved but are not performing in the classroom and those who have not acquired the skills.

The PIAT written by Lloyd Dunn and Fredrick Markwardt, 1970, is a standardized, individually administered test designed to provide a wide-range screening measure of achievement. Test-retest reliabilities for the total test are .82 to .92 (median .89); Reading Recognition sub-test .81-.94 (median .88); Reading Comprehension .61-.78 (median .64); and Spelling .42-.78 (median .65). Buros 7th Mental Measurements Yearbook gives it generally good reviews.

The ITPA, revised in 1968, was written by Samuel A. Kirk, James J. McCarthy, and Winifred D. Kirk, based on a model of the communication process originally proposed by C. E. Osgood. It attempts to analyze the way

*Buros, O. (Ed.) The Seventh Mental Measurements Yearbook, Vol. I, Highland Park, N. J.: The Gryphon Press, 1972, P. 68.

information is channeled in and out (ex. auditory, visual, tactile); at what level (automatic, representational); and through what process (encoding decoding, associating). The test was originally standardized on "average" students in order to have a comparison reference group. Thus, students who score below the norms for average children show deficits in their cognitive functioning but without norms for emotionally disturbed, or retarded or learning disability, it may be difficult to compare with other similarly handicapped youngsters. Nevertheless, the Buross reviewers feel that technical characteristics such as reliability are adequate and the test can be useful in diagnosing learning disabilities.

Reading, Spelling and Mathematics - The objective states that 80% of the students would demonstrate a statistically significant increase of post-test over pre-test scores.

Nine students were tested on the Wide Range Achievement Test (WRAT) and two on the Peabody Individual Achievement Test (PIAT). These results were grouped together to check the percentage of students who showed an increase, but only the WRAT raw scores were used to determine means and the significance of differences because of different standardization groups. Where either a pre- or post- score was missing, that set was not included in the calculation of the statistics. Table III shows the differences between pre- and post-testing in Reading.

TABLE III

Pre- and Post-Test Scores in Reading

Student	Name of Test	Pre-Test Score	Post-Test Score	+, -, or 0 Gain *
A	W.R.A.T.	2.5	3.0	+
B	W.R.A.T.	-	1.5	
C	W.R.A.T.	6.1	7.2	+
D	W.R.A.T.	4.1	4.8	+
E	W.R.A.T.	2.0	2.2	+
F	W.R.A.T.	PK.1	N.5	-
G	W.R.A.T.	PK.1	PK.1	0
H	W.R.A.T.	K.1	1.6	+
I	W.R.A.T.	1.9	2.5	+
J	P.I.A.T.	1.0	1.8	+
K	P.I.A.T.	3.0	3.9	+

* Plus gains were 8 out of 10, or 80%

As may be seen in Table III, 80% of the students showed a gain in Reading scores.

In order to determine the significance of the pre-post differences in reading scores a Wilcoxon's T statistic for the Matched-Pairs Signed-Ranks Test was computed using the raw scores on the WRAT (See Table IV).

TABLE IV
Significance of the Difference
Between Pre- and Post- Scores
on the WRAT Reading Test *

Student	Before	After	Difference
A	46	51	5
C	70	76	6
D	58	63	5
E	38	41	3
F	3	1	-2
G	3	3	0
H	9	33	24
I	37	46	9

* Wilcoxon T = 1, significant at .05

According to the results shown in Table IV, the pre-post differences in reading were statistically significant.

Table V shows the differences between pre- and post-testing in Spelling.

TABLE V
Pre- and Post-Test Scores in Spelling

Student	Name of Test	Pre-Test Score	Post-Test Score	+, -, or 0 Gain *
A	W.R.A.T.	2.0	3.0	+
B	W.R.A.T.	1.0	2.9	+
C	W.R.A.T.	5.0	6.5	+
D	W.R.A.T.	4.5	5.5	+
E	W.R.A.T.	3.5	2.5	-
F	W.R.A.T.	PK.1	1.2	+
G	W.R.A.T.	PK.1	PK.1	0
H	W.R.A.T.	K.1	1.1	+
I	W.R.A.T.	1.5	2.5	+
J	P.I.A.T.	1.2	-	
K	P.I.A.T.	3.6	3.7	+

* Plus gains were 8 out of 10, or 80%

Table V shows that 80% of the students demonstrated a gain in Spelling scores.

A Wilcoxon's T statistic was computed to determine the significance of the pre-post differences in the WRAT spelling scores. (See Table VI).

TABLE VI

Significance of the Difference Between Pre- and Post- Scores on the WRAT Spelling Test *

Student	Before	After	Difference
A	27	34	7
B	18	33	5
C	42	48	6
D	40	44	4
E	36	30	-6
F	3	25	22
G	3	3	0
H	9	23	14
I	23	30	7

* Wilcoxon T = 3.5 significant at .05

As is shown in Table VI, the pre-post differences in Spelling were statistically significant.

Table VII shows the differences between pre- and post-testing in Arithmetic.

TABLE VII
Pre- and Post-Test Scores in Arithmetic

Student	Name of Test	Pre-Test Score	Post-Test Score	+, -, or 0 Gain *
A	W.R.A.T.	3.6	4.7	+
B	W.R.A.T.	-	2.9	
C	W.R.A.T.	3.9	4.7	+
D	W.R.A.T.	1.0	2.2	+
E	W.R.A.T.	3.9	3.2	-
F	W.R.A.T.	PK.4	K.4	+
G	W.R.A.T.	PK.1	PK.1	0
H	W.R.A.T.	K.1	1.0	+
I	W.R.A.T.	2.6	3.0	+
J	P.I.A.T.	2.7	3.9	+
K	P.I.A.T.	3.5	3.7	+

* Plus gains were 8 out of 10 or 80%.

According to Table VII, 80% of the students showed a gain in Arithmetic.

A Wilcoxon's T-statistic was computed to determine the significance of the pre-post differences in the WRAT Arithmetic scores. (See Table VIII)

TABLE VIII

Significance of the Difference Between Pre- and Post- Scores on the WRAT Arithmetic Test *
(Raw Scores)

Student	Before	After	Difference
A	29	33	4
C	30	33	3
D	16	23	7
E	30	28	-2
F	5	14	9
G	3	3	0
H	8	22	14
I	25	27	2

* Wilcoxon T = 1.5, significant at .05

Table VIII shows that the pre-post differences in Spelling were statistically significant.

Since 80% of the students demonstrated a statistically significant increase in reading, spelling, and mathematics, Objective B-2 has been met.

The question may arise as to the expected pre-post gain for these students. The normal student is expected to make one year's academic growth in one year. Disturbed students, even those with average and above average intelligence, do not generally fit this pattern. For many such students, it is a challenge just to maintain the previous achievement.

A further analysis was done comparing the achievement made by the students in the program this year, with their average achievement up until this year. Average achievement was determined by dividing the mean pre-test score by nine (9), the mean number of years in school (as assumed from the mean age at pre-test.) This will constitute an operational definition of "Expected Gain" (See Table IX).

TABLE IX

Percent Increase of Mean Gain Over Expected
Gain in Project Students on the W.R.A.T.

Subject	Mean Pre-Score	Mean Post-Score	Gain In Months	Expected Gain in Months	Percent of Increase Over Expected Gain
Reading	1.6	2.1	+5	+18	277%
Spelling	1.4	2.5	+1.3	+16	813%
Arithmetic	1.4	2.2	+8	+16	500%

The percent of increase over expected gain, shown in Table IX further illustrates the effectiveness of the program.

The results of the analyses on achievement testing must all be interpreted with caution because of the limitations of the one group pre-test/post-test design which is unable to control for several factors of internal and external validity.

Psycholinguistic Development - It was determined by the Communications Disorder Specialist that five students in the program needed help in their psycholinguistic development. Pre- and post-testing on the ITPA showed growth in all but one area. All students were not given all subtests since diagnoses varied. Pretesting indicated low psycholinguistic ability with the average yearly growth on the subtests ranging from 5 months to 7 months. The average yearly growth was determined by dividing the mean psycholinguistic age (PIA) on the pre-test by the mean actual age at the time of the pre-test. This was given an operational definition of "Expected mean gain". The comparison between the expected mean gain and the actual mean gain is shown in Table X. The mean yearly growth was then adjusted according to the length of time between pre- and post-testing.

TABLE X

Comparison Between Expected Mean Gain* and Actual Mean Gain in Psycholinguistic Age (PLA) on ITPA Subtests

<u>Name of Subtest</u>	<u>Expected Mean Gain in Months</u>	<u>Actual Mean Gain in Months</u>
Auditory Preception	4	-3
Visual Reception	5	11
Visual Sequential	4	23
Auditory Association	4	8
Auditory Sequential	5	6
Visual Association	4	30
Manual Expression	Above Norms	Above Norms
Visual Closure	4	12
Grammatic Closure	3	8
Auditory Closure	5	8+

* Expected Mean Gain Based on Age, Pre-Test Scores, and Time Between Pre- and Post-Testing.

The table shows that only in the area of Auditory Reception, was the actual mean gain less than the expected mean gain. The two areas showing exceptional growth were Visual Sequential and Visual Association. These results, however, must be interpreted with caution because of (1) the small number of students involved, (2) lack of a control group, and (3) the possibility of the influence of statistical regression to the mean.

Assessments for Behavior Change in the Areas of Social Interaction, Verbal Interaction and Behavioral Symptomology - A statistical analysis of the results of the Devereaux Adolescent Behavior Rating Scale used with the YIPS students was done by Ronald Williams, psychologist at Bundy School (See Appendix E for complete report.) The Devereaux Scale was authored by George Spivach, Jules Spotts and Peter Haines in 1967. It was designed to measure overt behavior symptoms of disturbed adolescents. A report in Buros suggests that it is a good instrument for use with children such as those in the YIPS program. A review of other tests listed in Buros as well as an ERIC search revealed no other instrument as adequate. The disadvantage of using the Devereux is the time required for administering repeated measures which would give a more accurate picture of the YIPS students.

In Ronald Williams' "Discussion and Summary" section of his report (See Appendix E), he writes that test results indicate that all of the students (100%) have social and/or emotional difficulties. However, post-test results showed improvement. He states:

Eighty-six percent (86%) of the Devereaux factors and rational clusters evidenced improvement over pretest ratings. However, only two factors reached statistical significance (emotional Distance and Bizarre Speech and Cognition).

These findings suggest that this group of students experienced a relative increase in their abilities to purposefully engage social environment for the fulfillment of interpersonal needs; with an emerging appropriateness of thought and behavior.

Two factors, unethical behavior and paranoid thinking, increased from pre- to post-testing. Concerning these factors, Williams states, "This is thought to be a reflection of the extent of perceived (or rated) pathological disturbance in this group and its expected resistance to change."

He also cautions the reader on interpreting the results with unlimited confidence because of the One Group Pre-Test Post-Test Design, the times of the year when the scales were administered, and the absence of interrater reliability measures. With these limitations in mind, one can state that the students did show increased frequency of appropriate social interactions, reduced frequency of inappropriate verbal interactions, and reduced frequency of behavioral symptomology though the improvement was not always statistically significant.

Exportability - In their manual, SHARING EDUCATIONAL SUCCESS, A Handbook for Validation of Educational Practices, (1976), The United States Office of Education considers a validated practice exportable if, "(1) it is feasible to transport it to other school districts, and (2) it can be adopted or adapted by other school districts with similar needs and environments (p. 46). In addition to the success/effectiveness of the project, exportability is judged on the basis of the following 13 criteria.

1. Learner Needs
2. Continuation of Learner Elements with State or Local Funds
3. Willingness to serve as a demonstration Site if Funded for Dissemination
4. Target Population
5. Learner Involvement
6. Institutional Variables
7. Community and Home Variables
8. Activities Critical to Success
9. Essential Materials (Software)
10. (Essential) Equipment (Hardware) or Unique Facilities
11. Personnel
12. Personnel Training
13. Special Problems

All 13 items listed under exportability are applicable in the project. However, the items considered most important for this project are: target population; nature of institutional variables; community and home variables; and personnel.

Target Population - The Youth in Psychoeducational Services project was designed specifically for severely emotionally disturbed students. Potential adopters would have to give consideration to the screening, assessment, and placement procedures used by the project to identify students. Similarities of procedures throughout the entire diagnostic process would insure a population composition comparable to that for which the YIPS program was intended.

Institutional Variables - The YIPS project is based in a school that provides some of the facilities necessary for such a program. Quiet rooms, study carrels, and a high staff-to-student ratio are crucial components of a program for students with severe emotional disturbance. Equivalent facilities would be advisable for success at another site.

Community and Home Variables - The YIPS project outlines a comprehensive psychoeducational approach in treating emotionally disturbed students. Family involvement is a necessary part of that treatment. Provisions for parents to be involved with educational plans; for family members wishing to participate in counseling sessions; and for continuous contact and feedback between home and school would be advisable for successful exportability.

Personnel - Training - Staff personnel with strong backgrounds and continuing training in the fields of special education, psychiatric social work, psychological counseling and testing, and speech pathology are essential to the YIPS program. Of the variables necessary for exportability this perhaps is the most crucial.

Findings

1. The YIPS program has served thirteen severely emotionally disturbed students, 9 female and 4 male, during the school year 1978-79.
2. Students in the YIPS program attend school more often than do comparable groups of students enrolled at Bundy School.
3. The average annual cost per-student in the YIPS program is 37% of the cost of residential treatment for that student.
4. Through extensive formal and informal assessments, appropriate behavioral, academic and therapeutic programs have been developed for each student.
5. Students in the YIPS program are receiving five hours of "therapeutic community", three hours of group therapy and two hours of individual therapy per week.
6. Analysis of WRAT and PIAT pre - post scores shows significant increase made by 80% of the students in reading, spelling, and arithmetic.
7. On nine of the subtests of the Illinois Test of Psycholinguistic Ability the actual mean gain for YIPS students exceeded the expected gain.
8. A comparison of achievement during YIPS year with average of achievement during previous years showed a percentage increase over expected gain ranging from 277% in reading to 813% increased achievement in spelling.
9. Though improvement was noted in the area of behavioral symptomology, improvement on only two of fifteen Devereaux factors was statistically significant.

CONCLUSIONS

1. THE YIPS PROGRAM IS A COST EFFECTIVE ALTERNATIVE TO INSTITUTIONAL PLACEMENT FOR SEVERELY EMOTIONALLY DISTURBED STUDENTS. The average annual cost per student in the YIPS program is 37% of the cost of residential treatment for that student.
2. THE YIPS APPROACH IS AN INTENSE PSYCHOEDUCATIONALLY ORIENTED PROGRAM. Comprehensive assessment and individualized academic and therapeutic plans are characteristic of the program (provided by a staff of specialists).
3. STUDENTS IN THE YIPS PROGRAM HAVE PROFITED FROM THIS PUBLIC SCHOOL EXPERIENCE. Students attend school more often and have made academic achievement gains.
4. CHANGES IN STUDENT BEHAVIORAL SYMPTOMOLOGY THOUGH PRESENT WERE NOT STATISTICALLY SIGNIFICANT. Measurement of student improvement may require a more sensitive instrument and/or design.

EVALUATION RECOMMENDATIONS

1. EVALUATION SHOULD INCLUDE A MEASURE OF BEHAVIOR IN ADDITION TO THE MEASURE OF PATHOLOGY PROVIDED BY THE DEVEREAUX. A behavioral measure will give a more accurate picture of behavioral change over a short period of time. Using the original Devereaux for baseline data, continued use can indicate a change toward more normal behavior.
2. A TIME SERIES DESIGN SHOULD BE USED FOR BOTH ACADEMIC AND BEHAVIORAL INSTRUMENTS. Due to the variability of behavior of this student population, a simple pre-post design may not accurately reflect change over time.
3. A PLAN SHOULD BE FORMULATED TO MEASURE THE EXTENT TO WHICH THE PARENTS ARE INVOLVED IN THE PROGRAM. A comprehensive psycho-educational approach includes parent involvement as stated in the proposal.

APPENDIX A

**Standardized Tests Administered
for Diagnoses**

Standardized Tests Administered For Diagnoses

1. Wechsler Intelligence Scale for Children - Revised
2. Stanford Binet Intelligence Scale (L-M)
3. Wide Range Achievement Test
4. Bender Visual Motor Gestalt Test
5. Cattell Infant Intelligence Scales
6. Thematic Apperception Test
7. Rorschach
8. The Devereux Adolescent Behavior Rating Scale
9. The Behavior Checklist
10. The Illinois Test of Psycholinguistic Abilities
11. Peabody Picture Vocabulary Test
12. Goldman-Fristoe Test of Articulation
13. Goldman-Fristoe Woodcock Test of Auditory Discrimination
14. San Diego Quick Assessment Test
15. Slosson Oral Reading Test

APPENDIX B

**Curriculum Activities
in the YIPS Program**

Curriculum Activities in the YIPS Program

Letter Identification - (Upper and Lower Case)

Child is shown letters at random and asked to identify each one.

Phonetic Skills

Using the Peabody pictures, a picture card is shown, the picture is identified, the student then states what the beginning sound is.

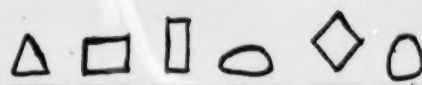
Number Identification

Using flashcards with the numbers 1-30, have the student identify the number when flashed.

Have student count orally

Shape Identification

Using flashcards with the following shapes the student identifies the shape when flashed.



Color Identification

Using flashcards, the student identifies what color is being flashed.

Using DLM cards to test understanding of the concepts above, under, next to

Daily Workbook Assignments - Workbooks Used

Color and Learn, Fun with Writing #1, See a Word Say a Word (k-12), Count and Write Ready Go Math (#1), Tag In and Out All Around, Sullivan Reading Readiness, D'Nealian Handwriting Readiness (#1), SRA Mathematics Readiness, See Hear Say Do (Phonovisual Consonant)

Student/Teacher Alphabet Flashcards - flash back and forth

Alphabet flashcards w/sandpaper - Student uses tactile sense to identify letter

Peabody Picture Cards (Primary Kit)

Used by teacher and student for a variety of activities

Expressive Language - identifying

Nutrition Unit - Sorting/Naming

Careers - Naming Community Helpers

Lotto Games

A B C

Cooking Activities - To develop:

Measuring Skills

Eye/Hand Coordination

Survival Skills

Reading and Writing Recipes

Establishing or Reestablishing

Good Nutritional Habits

Reading Maps

Survival Skills - Learning address and phone; Name of City, Importance of Washington, D. C.

Reading and Reading Readiness Activities

- various ditto sheets, many teacher made sheets
- workbooks mentioned above
- students make letter book with letters and pictures representing those letters they know
- while going through current reading material, the student identifies the beginning or ending sound of pictures as pointed by the teacher
- teacher-made games for sound/symbol identification
- on a one to one, student/teacher look at current magazines and newspapers, student attempts to develop "survival sight work vocabulary list"

ChartsPhonovisual Charts

A B C Charts (for letter identification and sound identification)

Science

Science activities have been taken from Ranger Rick, a monthly publication. We go through the magazine, as a group activity, discussing the pictures, completing the activity sheets and carrying out some of the experiments.

Monthly Activities

For each month of the school year, we discuss and have coordinated activities for the special dates in each month. (e.g., Thanksgiving: Halloween-carving pumpkins, making pumpkin seeds, various December celebrations, Kwanza: celebrating and learning about Martin Luther King's birthday. Black History month, introducing important black leaders of the past and present

Math Activities

1. measuring objects within the classroom
2. student-made clocks to use in telling time
3. ditto sheets from various sources, many teacher made work sheets
4. activities with the students' number line
5. counting money

APPENDIX C

Analysis of Attendance

Summary of Attendance Evaluation

(YIPS - Program)

The purpose of this report is to provide a statistical evaluation of the attendance records of those youngsters who were active participants in the Youth in Psychoeducational Services Program (during the 1978-79 academic year). This analysis is intended to partially fulfill the requirements for an on site evaluation of a Title IV, Part C Project (scheduled: July 17, 1979). This criteria specifically requests "a statistical measure of the difference between attendance records of project students (YIPS), and of emotionally disturbed special education students in another program." Students from the Bundy School are used as the comparison group in this analysis.

Procedure

The subjects in this analysis were the 11 students who were active participants in the YIPS-Program, and 22 students from the Bundy School Program. This sample consisted of eight (8) females (four (4) from the YIPS Program and four (4) from the Bundy Program), and 25 males (seven (7) from the YIPS-Program and eighteen (18) from the Bundy Program). The total number of subjects was 33.

A random sample of 22 students was drawn from the total list of students attending the Bundy School Program. The randomization process allowed for the unbiased formation of two groups with 11 students in each. This process

consisted of assigning each students (in the Bundy Program) a numerical value, entering a table of random numbers, and selecting the first 22 values which corresponded to those assigned to the students. The resulting two groups formed the comparison groups against which the attendance of the YIPS-Program was evaluated.

The data generated from this procedure was analyzed by means of a Mann-Whitney U Test. This is a nonparametric statistical technique, which allows for the determination of statistical difference between small samples, i.e., samples that do not approximate the normal distribution. Analysis of mean difference (non-statistical) and percentages were also used.

Results

The means, standard deviations, and average percents of attendance for the three groups are given in Table I below. The designations for the three groups in this table are: Group I (YIPS-Program), Group II (Sample A from Bundy Program), and Group III (Sample B from Bundy Program).

	Mean	Standard Deviation	Average Percent of Attendance
Group I	145.18	14.51	56.90
Group II	91.00	42.35	35.70
Group III	119.46	17.99	46.82

The difference between the attendance rates of Group I and Group II was statistically significant. ($U = 8.50$ $p > .05$). The difference between the attendance rates of Group I and Group III was also significant ($U = 13.50$, $p > .05$). These three groups also differed in average percent of attendance. The average percent of attendance for the YIPS-Program was 56.90. This was considerably larger than the attendance rates for both Group II (35.70) and Group III (46.82). The mean number of days attended in Group II ($\bar{x} = 91.00$), and Group III ($\bar{x} = 119.46$) was significantly lower than that observed for Group I ($\bar{x} = 145.18$).

Discussion and Summary

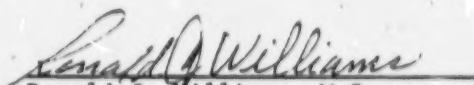
The students in the YIPS-Program attended school on the average of 145.18 days during the past academic year (1978 to 1979). This average rate of attendance was significantly larger than that observed in two comparison groups that were randomly drawn from the Bundy School Program. The superiority in rate of attendance was consistent and stable across the three evaluative techniques employed in this analysis (i.e., Mann-Whitney U Test, mean differences--without statistical tests, and average percent of attendance).

In summary, this analysis demonstrates that the students (11) who are active participants in the Youth in Psychoeducational Services Program attended school more often than those students enrolled in the Bundy School Program.

Note:

Two students who received program services were not included in this analysis. A male student withdrew (from the YIPS-Program) in order to join the Job Corps. However, at the time of his withdrawal, he had attended for 63 days (or 53.3%).

A 13 year old female was added to the program on an emergency basis (due to the closing of a residential treatment center). She entered during May, 1979. Her attendance rate was 100% (or 18 days).



Ronald J. Williams, M.S.
Clinical Psychologist

APPENDIX D

Predicting Cost of Programs for
Emotionally Disturbed Youth

Predicting Average Cost Per Diem for two Types
of Programs for Emotionally Disturbed Youth

<u>Costs</u>		Residential Treatment Centers	CPI *
Halfway Houses			
1973	17.89	38.00	132.4
1975		47.00	160.6
	15.77%	11.21%	8.71%
1976	27.76		170.1
June 1979			216.6
			8.39%
			7.76%
			10.13%

Forecasting Method

Average Cost Rate/Average CPI Rates = $(15.77 + 11.21)/(8.71 + 10.13) = 1.432$

Forecast Ratio = $1.432 = X / [(8.39 + 7.76)/2] \times 11.56$ (forecasted annual inflation rate)

<u>Forecasts</u>		@	11.56% Annum	
Halfway Houses			Residential Treatment Centers	CPI
June 1979	38.55		72.81	218.9
June 1980	43.00		81.23	

* Consumer Price Index

APPENDIX E

Summary of Assessments
for Behavior Change

Summary of the Assessments

for Behavior Change (Ed. Note- Selected Portions)

The purpose of this report is to provide the results of a pretest-posttest behavior analysis of students attending the Youth in Psycho-educational Services Program (YIPS-Program). The proposal for the YIPS-Program mandates that assessments of behavior be taken to assist in evaluating the attainment of three program objectives, i.e., improvements in social interactions, verbal interactions, and behavior symptomatology. Furthermore, it was recommended that these assessments be conducted using a pretest-posttest design. This recommendation was accepted and adhered to. This report is divided into two parts. The first part, reports the results of the total group's evaluation. The second part, reports the results of each individual's evaluation.

Part I

Procedure

Subjects

The 13 students who were active participants in the YIPS-Program served as subjects for this evaluation. The sample consisted of 9 females and 4 males. Their ages ranged from 13 to 17 years. There was a 16% attrition rate over a 9 month period. (Both students were males. One withdrew from the program to attend Job Corps and the other withdrew from the program to seek a residential placement.) Two youngsters were added to the program. A female student was placed in the program on an

"emergency basis." She entered during the last 18 days of the academic year and was not included in the analysis. A male student entered shortly after the midyear break. The results presented in this summary were derived from a total of 11 students.

Instruments

The Devereaux Adolescent Behavior Rating Scale (Spivack, Haines, and Spotts, 1967)^{*} was employed as the assessment instrument for this evaluation. This scale consists of 84 items that are rated by a Likert scaling procedure. It contains 12 primary factors, and 3 rational clusters. These are: Un-ethical Behavior; Defiant-Resistive; Domineering-Sadistic; Heterosexual Interest; Hyperactive-Expansive; Poor Emotion Control; Need Approval-Dependency; Emotional Distance; Physical Inferiority-Timidity; Schizoid Withdrawal; Bizarre Speech and Cognition; Bizarre Actions; Inability to Delay; Paranoid Thinking; and Anxious Self-Blame. Reliability data is provided in the test manual (test-retest and rater reliabilities). Both appear to be within acceptable statistical limits. No reliability or validity data derived from Black inner city youth was reported (or available). These were assumed on a consensual basis.

Data Analysis

The data from this evaluation was analyzed by means of the Wilcoxon Matched Pairs Signed Ranks Test (the primary mode of analysis). This is a nonparametric statistical procedure which allows for the determination of differences between matched pairs of observation. In addition to the

* Spivack, G., Haines, P.E., and Spotts, J. Devereaux Adolescent Behavior Behavior (DAB) Rating Scale Manual. Devon, Pennsylvania: The Devereaux Foundation, 1961.

Wilcoxon Test, analysis of percentages and comparisons of mean differences (without statistical test) were also performed.

Method

Behavior ratings were obtained on each student. The classroom teachers served as raters. These ratings were collected on a pretest-posttest basis. The pretest phase was conducted in October, 1978 (except for one student who entered the program in February, 1979. His pretest ratings were obtained in April, 1979). The pretest data was obtained after each child had been in the program for two academic weeks (or 10 days). The posttest phase was conducted during May, 1979. Significant alterations in the posttest phase¹ were necessitated by the absence pretest rater (due to military obligations). The posttest ratings of four students were affected by the alterations. These ratings were conducted by the educational assistant assigned to this class.

1

This alteration in the accepted procedure for accurate pretest-posttest assessment rendered the obtained results suspect, and of questionable validity. More will be said about the limiting aspects of this evaluation in the discussion section of this paper.

Unethical Behavior: This factor measures the absence of internalized codes of ethical and social behavior. Both the pretest and posttest means (Pretest $\bar{x} = 10.83$; and Posttest $\bar{x} = 11.00$) were considerably larger than the mean reported for the "normal group," in the standardization population ($\bar{x} = 5.5$). Sixty percent of the pretest ratings, and 40% of the posttest ratings exceeded the clinically significant range.² (The upper limit of this range is 7.5, and the lower limit is 3.5). Students were not rated significantly lower on this factor at posttesting ($T = 25.00$, $p < .05$).

Defiant-Resistive: This factor was designed to assess the presence of behaviors indicating active resistance to intervention and negation of adult wishes. The means from pretest and posttest ratings were much higher than the "normal" portion of the standardization population (pretest $\bar{x} = 15.25$; posttest $\bar{x} = 14.55$; and $\bar{x}$ of normal group = 10.50). Fifty-three percent of the pretest ratings were above the range of clinical significance (upper limit = 13.50 and lower limit = 7.50); and 60% of the posttest ratings were above this range. Wilcoxon Test analysis indicated a non-significant difference between pretest and posttest ratings. ($T = 18.5$, $p < .05$).

Domineering Sadistic: This factor defines a tendency to aggressively dominate peers in a belittling or sadistic manner. The mean of the normal group from the standardization population ($\bar{x} = 7.50$) was considerably lower than both the pretest mean ($\bar{x} = 12.84$), and posttest mean ($\bar{x} = 11.64$). Fifty-three percent of the pretest ratings, and 33% of the posttest ratings

2

The clinically significant range refers to "the range of scores for the middle two-thirds (2/3) -- ± 1 standard deviation--of a heterogeneous group of 548 emotional disturbed adolescents." Spivack, et. al., 1967.

were above the clinically significant range (lower limit = 4.50 and upper limit = 10.00). A statistically non-significant difference exists between pretest and posttest ratings ($T = 26.50$, $p < .05$).

Heterosexual Interest: This factor indicates interest in the opposite sex, as revealed through direct action, or concern with clothing or cosmetics. The means of the pretest ($\bar{x} = 18.70$) and posttest ratings ($\bar{x} = 16.45$) were considerably larger than the mean of the "normal group" in the standardization population ($\bar{x} = 13.50$). Forty percent of the pretest ratings were above the range of clinical significance (lower limit = 9.00 and upper limit = 17.50). Twenty-six percent of the posttest ratings were above this range. A non-significant difference between pretest and posttest ratings was indicated by the Wilcoxon Test analysis ($T = 19.00$, $p < .05$).

Hyperactive-Expansive:

This factor provides an estimate of the general pace of motor activity and degree of expansiveness in mood. The mean ratings from both the pretest and posttest were larger than the mean rating reported for the normal group (pretest $\bar{x} = 21.40$, posttest $\bar{x} = 19.09$, and normal group $\bar{x} = 15.50$). Forty-six percent of the pretest ratings and 33 percent of the posttest ratings were above the range of clinical significance. The pretest and posttest ratings were not significantly different (statistical significance). $T = 11.00$, $p < .05$. (10.00 is the lower limit for this factor, and 20.50 its upper limit.)

Poor Emotional Control: This factor was structured to assess a proneness to emotional upset or poorly controlled emotional responses. The mean pretest rating of 19.58 and mean posttest rating of 18.72 were larger than the mean rating reported for the normal group from the standardization population ($\bar{x} = 11.50$). Sixty percent of the pretest ratings and 53 percent of the posttest ratings were above the range of clinical significance. The lower limit of this range is 8.50, and the upper limit is 15.00. Ratings on this factor at posttesting were not statistically different from pretest ratings ($T = 19.00, p < .05$).

Needs Approval, Dependency: This factor contains items which assess the extent to which the adolescent moves toward, and seeks out adults for support, approval, or some type of dependency relationship. The pretest mean rating ($\bar{x} = 15.62$) was considerably larger than the mean rating from the normal group of the standardization population ($\bar{x} = 9.50$). The posttest mean of ratings ($\bar{x} = 14.63$) was also larger than the normal group's mean ratings. Sixty-six percent of the pretest ratings, and 60 percent of the posttest ratings were above the range of clinical significance for this factor (lower limit = 6.50, and upper limit = 12.00). Pretest ratings were not significantly different than posttest ratings ($T = 12.5, p < .05$).

Emotional Distance: This factor assesses the extent to which the adolescent exhibits a lack of interpersonal emotional response, i.e., the degree of empathetic emotional experiences in interpersonal relationships. The mean pretest rating was 14.58, and the mean posttest rating was 11.36. Both of these mean ratings were higher than that reported for the normal group in the standardization population ($\bar{x} = 8.50$). Fifty-three percent of the

pretest ratings, and 40 percent of the posttest ratings were above the range of clinical significance. Posttest ratings were statistically different from pretest ratings ($T = 2.00$, $p > .05$).

Physical Inferiority-Timidity: This factor contains items that were designed to assess the degree to which the adolescent is physically inferior, and exhibits a related social reticence, and (or) fear. The means of both pre and posttest ratings (pretest $\bar{x} = 18.91$, and posttest $\bar{x} = 16.73$) were above that reported for the normal group in the standardization population ($\bar{x} = 8.50$). Fifty-three percent of the pretest ratings, and 46 percent of the posttest ratings were above this factor's range of clinical significance (lower limit = 5.00 and upper limit = 12.50). Wilcoxon Test analysis revealed a non-significant difference between pretest and posttest ratings ($T = 17.5$, $p < .05$).

Schizoid Withdrawal: This factor measures the degree to which the adolescent is oblivious of (if not confused by) the world around him, and apparently preoccupied with inner thoughts and fantasies. The pretest mean rating was larger than the mean reported for the normal group in the standardization population (pretest $\bar{x} = 12.70$, normal group $\bar{x} = 8.00$). The mean posttest rating was also larger than the normal group mean (posttest $\bar{x} = 11.91$). Forty-six percent of the pretest ratings were above the range of clinical significance (lower limit = 6.00 and upper limit = 10.50). The Wilcoxon Test indicated lower ratings at posttesting. However, this difference was not statistically significant ($T = 6.50$, $p < .05$).

Bizarre Speech and Cognition: This factor contains items which measure some aspects of clearly obvious aberrant speech and (or) thinking. The mean of the pretest ratings ($\bar{x} = 17.25$), and posttest ratings ($\bar{x} = 13.82$) were larger than that reported for the normal group in the standardization population ($\bar{x} = 8.50$). Sixty-six percent of the pretest ratings and 33 percent of the posttest ratings were above this factor's clinically significant range (lower limit = 6.00 and upper limit = 10.50). The difference between pretest and posttest ratings was statistically significant ($T = 8.00, p > .05$).

Bizarre Actions: This factor measures the extent to which the adolescent carries out strange and (or) aberrant acts. The mean reported for the normal group from the standardization population ($\bar{x} = 6.50$) was considerably lower than the means from both the pretest ratings ($\bar{x} = 14.83$) and posttest ratings ($\bar{x} = 15.55$). Sixty-six percent of the pretest ratings were above the range of clinical significance for this factor (lower limit = 4.50, and upper limit = 9.50). Thirty-three percent of the posttest ratings were above this range. The difference between the pretest and posttest ratings was not statistically significant ($T = 19.00, p < .05$).

Inability to Delay: This rational cluster contains items which assess the adolescent's ability to contain and reliably (and willfully) regulate behavior while functioning under tension or frustration. The pretest mean ($\bar{x} = 29.60$) and posttest mean ($\bar{x} = 27.46$) were larger than the mean reported for the normal group in the standardization population ($\bar{x} = 15.50$). Sixty-six percent of

the pretest ratings, and 100 percent of the posttest ratings were above this factor's range of clinical significance (lower limit = 10.00 and upper limit = 20.00). The pretest-posttest difference was not statistically significant ($T = 20.00$, $p < .05$).

Paranoid Thinking: The items which form this rational cluster measures unrealistic thinking that is specifically concerned with the power relationship between "self" and others. The means of both the pretest ($\bar{x} = 10.73$) and posttest ratings ($\bar{x} = 10.08$), were larger than the reported mean for the normal group of the standardized population ($\bar{x} = 6.00$). Forty-six percent of the pretest ratings and 60 percent of the posttest ratings were above the clinically significant range for this factor (lower limit = 4.50 and upper limit = 7.50). The difference between pretest and posttest ratings was not statistically significant ($T = 21.00$, $p < .05$).

Anxious Self-Blame: The rational cluster assesses the degree to which the adolescent engaged in worry, anxious self-concerns, and self-blame. The mean of the normal group in the standardization population ($\bar{x} = 8.50$) was considerably lower than both the pretest ($\bar{x} = 17.42$) and posttest ($\bar{x} = 17.09$) mean ratings. Seventy-three percent of the pretest ratings were above the clinically significant range for this factor. Sixty percent of the posttest ratings were above this range. The difference between the pretest and posttest ratings was not statistically significant ($T = 25.50$, $p < .05$).

(Ed. Note) Part II, a subject-by-subject analysis has been omitted from this appendix report in order to shorten it.

Discussion and Summary

The results of this pretest-posttest behavioral analysis indicate that the students in the Youth in Psychoeducational Services Program are experiencing social and (or) emotional difficulties that are atypical for age and development; and are in need of psychoeducational services. One hundred percent (100%) of the mean ratings for the Devereaux factors (and rational clusters) exceeded the mean ratings for the "normal group" in the standardization population. Slightly less than half of the total ratings were above each factor's range of clinical significance. The mean percentage rating of scores above the clinical significant range was 49.50.

Considerable improvements were noted on posttest ratings. Eighty-six percent (86%) of the Devereaux factors and rational clusters evidenced improvement over pretest ratings. However, only two factors reached statistical significance (emotional Distance and Bizarre Speech and cognition)

These findings suggest that this group of students experienced a relative increase in their abilities to purposefully engage their social environment for the fulfillment of interpersonal needs; with an emerging appropriateness of thought and behavior. The overall findings of this

evaluation are in accord with several of the stated objectives for the Youth in Psychoeducational Services Program, i.e., to improve social interactions, verbal interactions, and behavioral symptomology.

When the magnitude of mean ratings are used as measures of improvement, two factors emerged as increasing in value; thereby suggesting possible deterioration in functioning. These factors were: unethical behavior and paranoid thinking. This is thought to be a reflection of the extent of perceived (or rated) pathological disturbance in this group and its expected resistance to change.

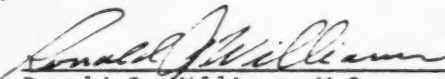
In addition to the customary limitations affecting evaluations of this sort (behavior ratings employing a pretest-posttest design), this evaluation was limited by several factors which both limited and undetermined the validity and value of obtained results. First, the pretest-posttest design does not appear to be appropriate for assessing rate of change (in socio-emotional areas) over an extended length of time. This design appears to be extremely vulnerable to confounding factors which are apparently idiosyncratic to settings which operate on fixed time intervals, e.g., the school setting. The beginning and termination phase of an academic year tend to impose excessive demands on all staff, particularly the special education teacher (who appear to be the most appropriate persons to serve as raters in such an assessment and design). They are required to take on non-routine duties for administrative, record keeping, and legal purposes, e.g., accounting for systems material, holding CST and other parent conferences, writing

IEP's etc. This situation does not permit optimal focus on the finer gradations of student's behavior (that are required by most rating scales). The demands of this situation appears to have an effect on both students and teachers. This situation heightens the effects of extraneous variables on obtained ratings of student's behavior.

A more appropriate procedure would entail taking repeated measures over shorter time intervals, and reducing the intervention phase to seven months.

Secondly, there is a conspicuous absence of any measure of rater accuracy (e.g., interrater reliability measures). This can be corrected by employing dual raters to independently assess each child. The most obvious (and appropriate) raters would be the classroom teacher and the educational assistant assigned to each class. Finally, this reported evaluation was limited by the use of a substitute rater for a group of four students (as mentioned earlier). The use of substitute raters at posttesting is considered to be an unacceptable procedure and is often cited as a major source of error in such procedure.

In summary, the results of this evaluation suggest that the students in the Youth in Psychoeducational Services Program are clearly in need of special education services and are capable of benefiting from such programming. Rated improvements were noted in areas which indicate marginal attainment of three program objectives. Although specific improvements were noted, other areas of cognitive, behavioral and emotional dysfunction were more resistant to change.


Ronald J. Williams, M.S.
Clinical Psychologist